



BHCTP Monthly Discharge Monitoring Report

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Month: October-15
Facility: Central Treatment Plant
Location: Bunker Hill Superfund Site
Contract Number: W912DW-13-C-0026-P00008

Total Flow For The Month From 006 Outfall: 51,448,000 gallons
Sludge pumping to CIA sludge pond: 1,501,200 gallons

Total Flow From Kellogg Tunnel: 52,082,800 gallons

Percent of Influent Successfully Treated: 100.0%

13 sample days * 6 parameters (Pb, Cd, Zn, Mn, TSS & pH) = 78 potential exceedances
78 - 0 exceedances = 78 78/78 = 100%

Results of Sampling Efforts:

All sampling has been performed in accordance with specifications and the Sampling and Analysis Plan. QC and QA samples have been taken as required. All sample analysis results may be found within this DMR.

Performance Evaluation (PE) sampling for the CTP continued, with five PE samples delivered to SVL for this reporting period. The PE samples were identified as CTPXX (random CTP sites). These samples consisted of preserved 500-ml trace metal samples to be analyzed for Cd, Pb and Zn. The PE acceptable quantitation range is listed on the 'QC' page of this DMR.

Trip blank and rinsate samples were also taken, with the results being reported on the 'PTM-004,RB,TB' page of this DMR.

Highlights of Plant Maintenance and/or Plant Optimization:

10-01-15 Performed monthly fire extinguisher inspection. All CTP fire extinguishers are fully charged and in good working condition at this time.

10-01-15 Performed monthly pump and motor inspection. All CTP pumps and motors are in good condition at this time with the exception of the Rapid Mix gear box. Gear box vibration is increasing.

10-01-15 Performed quarterly pump and motor preventative maintenance inspection with Cash Balancing Services. No significant vibration readings were found during this PM inspection. The Clarifier drive belts were found to be worn and will be replaced by the CTP operators.

10-05-15 Provided site access and plant tour to the Phase II contractors and subcontracting teams.

10-06-15 Provided site access and plant tour to the Phase II contractors and subcontracting teams.

10-06-15 Chief Operator, USACE COR and Process Engineer attended the monthly CTP process review meeting. Process quality, plant operations, and operator work schedules were reviewed.

Treated outfall and KT discharge sample analyses were reviewed.

The CTP treatment process is producing excellent discharge quality at this time. The pH set point will remain at 8.3.

10-07-15 Provided site access and plant tour to the Phase II contractors and subcontracting teams.

10-07-15 Performed troubleshooting and reset of the Aeration Basin pH meter. The meter was found in fail mode when operators arrived at the CTP. The pH meter maintained a pH output signal of 8.30 but did not have display indication. The meter power was reset; the meter was tested and found to be in good working condition. Operators could find no reason for the loss of display power to the meter. The meter has not experienced any addition errors or disruptions.

10-13-15 Performed a no-load emergency generator run test and diagnostics. CTP generator was operated for 30

minutes with no issues or errors.

10-14-15 Health and Safety Manager performed a quarterly site visit and safety documentation review.

10-15-15 Provided a plant and site tour to the USACE management team.

10-21-15 Performed the quarterly Direct Feed Line cleaning. The quarterly Direct Feed Line cleaning report was submitted to the USACE COR as an attachment to the October 21, 2015 CTP daily report.

10-21-15 Operators worked additional overtime hours to dismantle and inspect the #2 recycle sludge pump. At 14:00 the #2 recycle pump was found to be vibrating and sounded like debris was stuck in the pump. The pump was removed from service, drained and flushed. The pump housing inspection plate was removed, allowing access to the impeller area. The pump pre-impeller chopper blade was making contact with the inspection plate. The inspection plate was reinstalled as low as possible and is not contacting the chopper blade at this time. Operators could find no reason for the chopper blade to have changed locations. Operators will continue to monitor the recycle pump a minimum of twice per day.

10-27-15 Operators performed the monthly full load emergency generator run test. The emergency generator operated all CTP components for one hour as programmed with no issues or errors to report.

10-28-15 Operators performed the quarterly plant valve manipulation and manhole inspections. No abnormal conditions were found as noted on the inspection report submitted with the CTP daily report.

During this reporting period:

- The Kellogg Tunnel discharge flow decreased by 14% from October 2014, from 60.7 mg to 52.0 mg.
- The Kellogg Tunnel zinc concentration decreased by 14% from October 2014, from an average of 63 mg/L to 54 mg/L.
- The CTP operating pH set point was increased to 8.5 from 8.3 during extended KT low flow periods.
- The flocculent dosage remained at approximately 3 ppm to reduce process turbidity.
- The CTP sludge recycle rate remained at 400 gpm.
- CTP operators received no off-shift auto dialer call-out alarms.
- CTP operators performed no pumping events from the Lined Storage Pond.
- CTP operators performed Aeration Basin pH probe and grab sample verification twice per day.
- CTP operators observed no mill discharge in the Kellogg Tunnel flow.

Lessons Learned

No significant lessons to report for last month.

MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
2015	10	1	2015	10	31

PARAMETER		Quantity or Loading			Quality or Concentration				FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MONTHLY AVERAGE	DAILY MAXIMUM	UNITS	MINIMUM	MONTHLY AVERAGE	DAILY MAXIMUM	UNITS		
pH	Sample Measurement				6.95		7.21		Continuous	Meter
	Permit Required				6.0		10.0			
Flow Thru Treatment Plant	Sample Measurement	1.66	2.22	mgd						
	Permit Required		Daily							
Lead Total - Pb Effluent	Sample Measurement	0.04	0.10	lbs/day		0.003	0.006	mg/L	three samples/ week	Comp 24
	Permit Required	14.8	37.0			0.30	0.60	mg/L		
Zinc Total - Zn Effluent	Sample Measurement	2.17	3.35	lbs/day		0.17	0.22	mg/L	three samples/ week	Comp 24
	Permit Required	36.2	91.3			0.73	1.48	mg/L		
Cadmium - Cd Effluent	Sample Measurement	0.041	0.072	lbs/day		0.003	0.004	mg/L	three samples/ week	Comp 24
	Permit Required	2.40	6.10			0.050	0.100	mg/L		
Manganese - Mn Effluent	Sample Measurement	269.6	407	lbs/day		21.1	27.4	mg/L	three samples/ week	Comp 24
	No Permit Required					N/A	N/A	mg/L		
Total Suspended Solids - TSS	Sample Measurement	16.8	30	lbs/day		1.3	1.8	mg/L	three samples/ week	Comp 24
	Permit Required	985	1907			20	30	mg/L		

PREPARED BY: GARY FULTON

REVIEWED BY: Mark Reinsel, Ph.D., P.E.

NPDES DISCHARGE POINT 006
CENTRAL TREATMENT PLANT
MONTH: Oct-15

DAY	LEAD (Pb)		ZINC (Zn)		CADMIUM (Cd)		MANGANESE (Mn)		pH	FLOW		TSS		LOADING kg/day
	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day		mgd	mg/L	lbs/day	mg/L	
1										0.90				
2	0.003	0.02	0.210	1.45	0.004	0.03	27.4	190	7.11	0.83	1.0	6.9	3.14	
3										1.83				
4										2.13				
5	0.003	0.05	0.151	2.47	0.004	0.07	18.3	299	7.18	1.96	0.6	9.8	4.45	
6										2.05				
7	0.003	0.05	0.149	2.49	0.003	0.05	23.8	397	7.19	2.00	1.8	30.0	13.63	
8										1.08				
9	0.003	0.02	0.142	1.00	0.003	0.02	22.0	155	7.17	0.84	1.4	9.9	4.5	
10										1.73				
11										2.22				
12	0.003	0.05	0.134	2.24	0.003	0.06	16.7	279	7.21	2.01	1.2	20.1	9.1	
13										1.99				
14	0.003	0.05	0.153	2.62	0.003	0.05	23.8	407	7.15	2.05	1.4	24.0	10.86	
15										1.22				
16	0.003	0.02	0.140	1.03	0.002	0.02	22.8	167	7.13	0.88	1.6	11.7	5.33	
17										1.80				
18										2.04				
19	0.003	0.05	0.151	2.51	0.003	0.05	19.3	321	7.14	2.00	0.6	9.99	4.53	
20										2.06				
21	0.003	0.03	0.160	1.36	0.004	0.03	26.0	221	7.05	1.02	1.4	11.9	5.40	
22										1.77				
23	0.003	0.05	0.177	2.82	0.002	0.04	20.9	333	6.95	1.91	1.6	25.5	11.56	
24										1.14				
25										0.91				
26	0.003	0.02	0.221	1.75	0.003	0.02	17.7	140	7.11	0.95	1.0	7.9	3.60	
27										1.86				
28	0.003	0.05	0.201	3.35	0.003	0.05	11.4	190	7.10	2.00	1.4	23.4	10.60	
29										2.07				
30	0.006	0.10	0.183	3.05	0.003	0.04	24.2	404	7.04	2.00	1.6	26.7	12.11	
31										2.14				
Total	0.042	0.56	2.17	28.2	0.04	0.54	274.3	3505	92.5	51.38	16.6	217.8	98.8	
Sample Events	13	13	13	13	13	13	13	13		31	13	13	13	
Daily Average	0.003262	0.04	0.17	2.17	0.003	0.04	21.1	270	7.12	1.66	1.28	16.75	7.60	
Lab Detection Limit	0.003	0.004			0.001		0.004		0.01		0.800			

MIN	0.003	0.02	0.13	1.00	0.0023	0.02	11.40	140	6.95	0.83	0.60	6.93	3.14
MAX	0.006	0.10	0.22	3.35	0.0044	0.07	27.40	407	7.21	2.22	1.80	30.04	13.63

KELLOGG TUNNEL DISCHARGE
CENTRAL TREATMENT PLANT
MONTH: Oct-15
Data from SVL

DAY	LEAD (Pb)		ZINC (Zn)		CADMIUM (Cd)		MANGANESE (Mn)		pH	006 FLOW		TSS		
	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day		mgd	mg/L	lbs/day	kg/day	
1	0.492	3.70	43	322	0.068	0.51	76	574	3.45	0.90	80	601	273	
2										0.83				
3										1.83				
4										2.13				
5	0.471	7.70	45	739	0.072	1.18	82	1,333	3.50	1.96	51	833	378	
6										2.05				
7										2.00				
8	0.522	4.69	70	626	0.141	1.27	29	263	2.98	1.08	10	90	41	
9										0.84				
10										1.73				
11										2.22				
12	0.431	7.21	39	646	0.063	1.05	75	1,255	3.56	2.01	48	803	364	
13										1.99				
14										2.05				
15	0.530	5.40	84	856	0.138	1.40	31	311	2.97	1.22	10	102	46	
16										0.88				
17										1.80				
18										2.04				
19	0.442	7.36	41	676	0.066	1.10	78	1,299	3.54	2.00	61	1,016	461	
20										2.06				
21										1.02				
22	0.453	6.68	41	602	0.065	0.95	81	1,197	3.51	1.77	63	929	421	
23										1.91				
24										1.14				
25										0.91				
26	0.545	4.32	83	659	0.142	1.13	30	239	2.99	0.95	19	151	68	
27										1.86				
28										2.00				
29	0.469	8.09	44	753	0.062	1.07	71	1,227	3.58	2.07	62	1,069	485	
30										2.00				
31										2.14				

**PTM Effluent at Lined Storage Pond
CENTRAL TREATMENT PLANT**

Month: Oct-15

DATE	LEAD mg/L	ZINC mg/L	CADMIUM mg/L	pH s.u.	TSS mg/L
10/08/15	0.003	9.7	1.32	6.72	0.2
10/22/15	0.003	10.0	1.34	7.02	0.8

**RINSATE AND TRIP BLANKS
CENTRAL TREATMENT PLANT**

Month: Oct-15

Rinsate and Trip Blank samples will be taken approximately every 20 QC events, or one each per month.

LOCATION	DATE	SAMPLE	LEAD mg/L	ZINC mg/L	CADMIUM mg/L
Rinsate & Trip Blank					
Kellogg Tunnel Discharge	RB-10-05-15	<0.01	<0.004	<0.002	
Trip Blank (D.I.water)	TB-10-05-15	<0.01	<0.004	<0.002	

CENTRAL TREATMENT PLANT**MISCELLANEOUS FLOWS**Month : **Oct-15**

Date	KT Flow Meter Reading
9/30/2015	0
10/31/2015	52,082,800
Total	52,082,800

Date	006 Flow Meter Reading
9/30/2015	0
10/31/2015	51,448,000
Total	51,448,000

Sweeny Pump Station Reading				
Date	#1 Pump	620 gpm	#2 Pump	500 gpm
9/30/2015	170.0	Hours	785.0	Hours
10/31/2015	170.0	Hours	785.0	Hours
Total Hours	0.0	Hours	0.0	Hours
Total Flow for 004/Sweeny For The Month =	0			Gallons

PTM Discharge Flow

Date	Flow (gpm)
09/08/15	3.0
09/22/15	4.0

Date	Lined Storage Pond Water Level		
9/30/2015	1,000,000	gal	Elev. = 2269.0
10/31/2015	1,000,000	gal	Elev. = 2269.0

KELLOGG TUNNEL ANNUAL DISCHARGE FLOWS 2000-2009										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Jan.	61,000,000	61,677,510	54,606,100	53,066,890	52,223,080	53,150,000	56,050,900	56,281,000	53,465,820	50,936,960
Feb.	57,600,000	45,584,000	52,840,000	46,493,470	48,306,920	49,860,000	51,188,000	50,511,300	49,282,209	48,146,111
March	60,730,000	57,740,360	50,452,060	60,162,290	59,852,720	58,073,000	56,332,830	65,443,650	54,578,130	61,712,540
April	68,680,000	54,846,000	65,583,230	63,335,350	50,715,310	53,775,350	72,039,280	66,636,500	61,690,530	63,055,350
May	97,719,900	57,501,901	76,082,410	63,335,350	53,245,000	54,181,650	72,027,000	63,203,308	86,680,760	70,233,580
June	69,800,000	55,835,590	67,299,960	59,532,434	50,451,170	51,750,000	68,385,600	57,981,410	82,622,590	64,623,180
July	63,698,850	53,652,330	64,820,120	66,252,746	56,538,980	55,255,000	64,054,000	58,282,900	66,324,500	61,535,000
Aug.	66,707,120	45,289,000	58,212,940	62,074,750	52,002,140	49,970,000	64,621,000	55,335,900	65,168,620	56,446,670
Sept.	55,797,530	50,276,020	60,140,460	43,789,000	49,208,020	49,987,000	54,515,270	50,471,870	61,074,020	57,006,430
Oct.	60,424,720	50,660,840	54,485,871	52,869,290	59,601,690	52,807,000	57,610,030	50,086,330	58,666,300	55,830,000
Nov.	53,408,660	50,660,840	51,072,259	47,600,000	51,948,000	50,722,600	55,191,700	50,779,040	52,041,780	54,956,800
Dec.	56,414,870	53,464,780	56,034,000	56,413,080	56,770,000	54,904,400	60,486,900	53,716,210	55,727,260	54,542,700
Totals	771,981,650	637,189,171	711,629,410	674,924,650	640,863,030	634,436,000	732,502,510	678,729,418	747,322,519	699,025,321

KELLOGG TUNNEL ANNUAL DISCHARGE FLOWS 2010-2019										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jan.	55,503,180	61,797,170	58,434,610	61,855,400	57,478,450	58,440,540				
Feb.	50,819,910	54,556,227	57,763,170	59,383,290	54,607,950	59,767,470				
March	54,691,420	61,373,630	67,236,650	66,264,780	65,396,350	64,468,230				
April	56,255,340	65,687,340	81,233,630	69,619,100	65,618,770	63,056,840				
May	58,825,640	84,365,390	86,826,340	71,496,380	80,598,590	61,898,200				
June	56,770,200	79,985,540	83,440,990	64,663,900	65,623,330	56,368,540				
July	56,727,510	79,346,330	74,315,690	62,844,790	63,425,030	55,655,000				
Aug.	56,239,370	70,377,570	68,986,900	58,459,380	61,486,270	55,316,100				
Sept.	54,109,980	60,404,280	62,270,300	58,097,500	56,279,590	53,890,000				
Oct.	55,480,200	62,403,480	59,991,850	58,325,780	60,659,850	52,082,800				
Nov.	54,856,880	58,430,700	57,184,220	56,215,000	55,065,100					
Dec.	54,607,330	58,617,700	61,750,390	56,932,530	59,770,540					
Totals	664,886,960	797,345,357	819,434,740	744,157,830	746,009,820	580,943,720	0	0	0	0

Yellow indicates record monthly flow as well as record annual flow

KELLOGG TUNNEL ZINC DATA

Month	Concentration (mg/L)											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Jan.		86	81	79	63	70	61	72	57	68	41	46
Feb.		86	91	96	55	72	57	95	58	68	41	68
March		94	116	86	65	68	53	86	58	69	58	81
April		98	121	140	85	80	50	137	176	86	107	92
May		105	231	179	318	136	57	377	215	150	177	87
June		107	182	118	271	143	68	347	164	106	131	78
July		90	144	111	198	117	75	181	136	87	87	75
Aug.		87	112	92	132	94	79	130	110	86	76	66
Sept.		84	107	80	107	76	81	132	107	75	66	63
Oct.		59	81	100	88	99	75	70	86	70	67	63
Nov.		66	79	88	88	104	63	57	95	71	70	55
Dec.		67	62	78	65	76	59	61	88	69	54	49
average		64	88	121	102	131	88	64	152	108	82	79
lime usage (tons/day)		2.59	3.23	2.76	4.78	3.24	2.16	4.31	3.93	2.46	2.70	
Zinc Conc. Increase/Decrease		37%	-16%	29%	-33%	-27%	138%	-29%	-24%	-4%	-10%	
Lime Usage Increase/Decrease		25%	-15%	73%	-32%	-33%	100%	-9%	-37%	10%	-100%	

Bunker Hill Superfund Site						
Kellogg, Idaho						
Central Treatment Plant Review						
Month: Oct-15						
SAMPLE	DATE	PARAMETER	VALUE	QC/dup	UNITS	PRECISION
LOCATION			RESULTS			% RPD
Performance	10/01/15	Cadmium	0.050	0.050	mg/L	-0.8%
Evaluation		Lead	0.314	0.300	mg/L	4.6%
Sample		Zinc	0.783	0.730	mg/L	7.0%
(CTPXX-10-01-15)						
CTPXX-10-01-15	10/01/15	Cadmium	0.050	0.050	mg/L	-1.0%
		Lead	0.314	0.319	mg/L	-1.6%
Lab Duplicate		Manganese	0.002	0.002	mg/L	0.0%
		Zinc	0.783	0.791	mg/L	-1.0%
006/CTP Outfall	10/02/15	Cadmium	0.004	0.003	mg/L	11.1%
		Lead	0.003	0.003	mg/L	-6.5%
Lab Duplicate		Manganese	27.4	27.7	mg/L	-1.1%
		Zinc	0.210	0.214	mg/L	-1.9%
		pH	7.11	7.09	s.u.	0.3%
		TSS	1.0	1.2	mg/L	-18.2%
006/CTP Outfall	10/05/15	Cadmium	0.004	0.004	mg/L	4.7%
		Lead	0.003	0.003	mg/L	0.0%
Lab Duplicate		Manganese	18.3	18.3	mg/L	0.0%
		Zinc	0.151	0.145	mg/L	4.1%
		pH	7.18	7.17	s.u.	0.1%
		TSS	0.6	1.4	mg/L	-80.0%
Kellogg Tunnel	10/05/15	Cadmium	0.072	0.072	mg/L	0.4%
		Lead	0.471	0.464	mg/L	1.5%
QC Sample		Manganese	81.6	80.0	mg/L	2.0%
		Zinc	45.2	44.7	mg/L	1.1%
		pH	3.50	3.50	s.u.	0.0%
		TSS	51.0	52.0	mg/L	-1.9%
TB-10-05-15	10/05/15	Cadmium	0.001	0.001	mg/L	0.0%
		Lead	0.003	0.003	mg/L	0.0%
Lab Duplicate		Zinc	0.002	0.002	mg/L	0.0%
		Manganese	0.004	0.004	mg/L	0.0%
006/CTP Outfall	10/07/15	Cadmium	0.003	0.003	mg/L	-3.4%
		Lead	0.003	0.003	mg/L	0.0%
Lab Duplicate		Manganese	23.8	24.4	mg/L	-2.5%
		Zinc	0.149	0.151	mg/L	-1.3%
		pH	7.19	7.16	s.u.	0.4%
		TSS	1.8	1.8	mg/L	0.0%
Performance	10/08/15	Cadmium	0.050	0.050	mg/L	-0.2%
Evaluation		Lead	0.300	0.300	mg/L	0.0%
Sample		Zinc	0.777	0.730	mg/L	6.2%
(CTPXX-10-10-15)						
CTPXX-10-08-15	10/08/15	Cadmium	0.050	0.050	mg/L	-0.8%
		Lead	0.300	0.302	mg/L	-0.7%
Lab Duplicate		Manganese	0.002	0.002	mg/L	0.0%
		Zinc	0.777	0.783	mg/L	-0.8%
006/CTP Outfall	10/09/15	Cadmium	0.003	0.003	mg/L	-3.1%

SAMPLE	DATE	PARAMETER	VALUE	QC/dup	UNITS	PRECISION	MATRIX SPIKE DATA
LOCATION			RESULTS			% RPD	% RECOVERY
Lab Duplicate		Lead	0.003	0.003	mg/L	0.0%	93%
		Manganese	22.0	21.9	mg/L	0.5%	
		Zinc	0.142	0.142	mg/L	0.0%	91%
		pH	7.17	7.15	s.u.	0.3%	
		TSS	1.4	1.4	mg/L	0.0%	
006/CTP Outfall	10/12/15	Cadmium	0.003	0.004	mg/L	-2.9%	
		Lead	0.003	0.003	mg/L	0.0%	
		Manganese	16.7	16.8	mg/L	-0.6%	
		Zinc	0.134	0.135	mg/L	-0.7%	
		pH	7.21	7.23	s.u.	-0.3%	
QC Sample		TSS	1.2	1.4	mg/L	-15.4%	
		Cadmium	0.003	0.003	mg/L	9.2%	97%
		Lead	0.003	0.003	mg/L	0.0%	91%
		Manganese	16.7	16.8	mg/L	-0.6%	106%
		Zinc	0.134	0.135	mg/L	-0.7%	88%
Lab Duplicate		pH	7.21	7.16	s.u.	0.7%	
		TSS	1.2	1.2	mg/L	0.0%	
		Kellogg Tunnel	0.063	0.062	mg/L	0.5%	96%
		Lead	0.431	0.428	mg/L	0.7%	91%
		Manganese	75.0	74.3	mg/L	0.9%	89%
Lab Duplicate		Zinc	38.6	38.8	mg/L	-0.5%	
		pH			s.u.		
		TSS			mg/L		
		006/CTP Outfall	0.003	0.003	mg/L	3.3%	98%
		Lead	0.003	0.003	mg/L	0.0%	91%
Lab Duplicate		Manganese	23.8	24.5	mg/L	-2.9%	100%
		Zinc	0.153	0.157	mg/L	-2.6%	90%
		pH	7.15	7.12	s.u.	0.4%	
		TSS	1.4	1.4	mg/L	0.0%	
		Performance Evaluation Sample	0.049	0.050	mg/L	-1.2%	
(CTPXX-10-15-15)	10/15/15	Lead	0.300	0.300	mg/L	0.0%	
		Zinc	0.793	0.730	mg/L	8.3%	
		CTPXX-10-15-15	0.049	0.049	mg/L	0.0%	94%
		Lead	0.300	0.298	mg/L	0.7%	95%
		Lab Duplicate	0.002	0.002	mg/L	0.0%	99%
006/CTP Outfall	10/16/15	Zinc	0.793	0.788	mg/L	0.6%	97%
		Cadmium	0.002	0.003	mg/L	-4.1%	99%
		Lead	0.003	0.004	mg/L	-14.1%	92%
		Lab Duplicate	22.8	23.4	mg/L	-2.6%	
		Manganese	0.140	0.143	mg/L	-2.1%	94%
006/CTP Outfall	10/19/15	pH	7.13	7.10	s.u.	0.4%	
		TSS	1.6	1.6	mg/L	0.0%	
		Cadmium	0.003	0.003	mg/L	-3.3%	99%
		Lead	0.003	0.004	mg/L	-18.2%	92%
		Lab Duplicate	19.3	19.4	mg/L	-0.5%	
Kellogg Tunnel	10/19/15	Zinc	0.151	0.143	mg/L	5.4%	87%
		pH	7.14	7.04	s.u.	1.4%	
		TSS	0.6	0.6	mg/L	0.0%	
		Kellogg Tunnel	0.066	0.065	mg/L	1.8%	98%

SAMPLE	DATE	PARAMETER	VALUE	QC/dup	UNITS	PRECISION	MATRIX SPIKE DATA
LOCATION			RESULTS			% RPD	% RECOVERY
Lab Duplicate		Lead	0.442	0.435	mg/L	1.6%	91%
		Manganese	78.0	76.9	mg/L	1.4%	
		Zinc	40.6	39.9	mg/L	1.7%	112%
		pH			s.u.		
		TSS			mg/L		
006/CTP Outfall	10/21/15	Cadmium	0.004	0.004	mg/L	2.5%	106%
		Lead	0.003	0.003	mg/L	0.0%	98%
		Manganese	26.0	25.8	mg/L	0.8%	82%
		Zinc	0.160	0.160	mg/L	0.0%	94%
		pH	7.05	7.02	s.u.	0.4%	
PTM Discharge	10/22/15	TSS	1.4	1.4	mg/L	0.0%	
		Cadmium	1.34	1.34	mg/L	0.0%	
		Lead	0.003	0.003	mg/L	0.0%	
		Manganese	0.698	0.698	mg/L	0.0%	
		Zinc	9.96	9.82	mg/L	1.4%	
QC Sample		pH	7.02	7.03	s.u.	-0.1%	
		TSS	0.8	0.6	mg/L	28.6%	
		Cadmium	0.053	0.050	mg/L	6.2%	
		Lead	0.321	0.300	mg/L	6.8%	
		Manganese	0.872	0.730	mg/L	17.7%	
(CTPXX-10-22-15)		Zinc					
CTPXX-10-22-15	10/22/15	Cadmium	0.053	0.053	mg/L	1.3%	98%
		Lead	0.321	0.318	mg/L	0.9%	96%
		Manganese	0.002	0.002	mg/L	0.0%	102%
		Zinc	0.872	0.855	mg/L	2.0%	95%
006/CTP Outfall	10/23/15	Cadmium	0.003	0.003	mg/L	-6.7%	103%
		Lead	0.003	0.003	mg/L	0.0%	96%
		Manganese	20.9	21.0	mg/L	-0.5%	103%
		Zinc	0.177	0.178	mg/L	-0.6%	95%
		pH	6.95	6.83	s.u.	1.7%	
Lab Duplicate		TSS	1.6	1.6	mg/L	0.0%	
		Cadmium	0.003	0.003	mg/L	6.7%	103%
		Lead	0.003	0.003	mg/L	0.0%	96%
		Manganese	17.7	17.8	mg/L	-0.6%	106%
		Zinc	0.221	0.217	mg/L	1.8%	95%
006/CTP Outfall	10/26/15	pH	7.11	7.09	s.u.	0.3%	
		TSS	1.0	1.0	mg/L	0.0%	
		Cadmium	0.003	0.003	mg/L	6.7%	103%
		Lead	0.003	0.003	mg/L	0.0%	96%
		Manganese	17.7	17.8	mg/L	-0.6%	106%
Lab Duplicate		Zinc	0.221	0.217	mg/L	1.8%	95%
		pH	7.11	7.09	s.u.	0.3%	
		TSS	1.0	1.0	mg/L	0.0%	
		Cadmium	0.142	0.142	mg/L	0.0%	101%
		Lead	0.545	0.547	mg/L	-0.4%	97%
Lab Duplicate		Manganese	30.2	30.7	mg/L	-1.6%	
		Zinc	83.1	93.4	mg/L	-11.7%	
		pH			s.u.		
		TSS			mg/L		
006/CTP Outfall	10/28/15	Cadmium	0.003	0.003	mg/L	-6.3%	96%
		Lead	0.003	0.003	mg/L	0.0%	93%
		Manganese	11.4	11.4	mg/L	0.0%	101%
		Zinc	0.201	0.200	mg/L	0.5%	89%
		pH	7.10	7.09	s.u.	0.1%	
Performance	10/29/15	TSS	1.4	1.4	mg/L	0.0%	
		Cadmium	0.055	0.050	mg/L	8.8%	

		Bunker Hill Superfund Site					
		Kellogg, Idaho					
		Central Treatment Plant Review					
		Month: Oct-15					
		CONCENTRATION (mg/L)					
SAMPLE	DATE	PARAMETER	SPIKE	DUPLICATE	SPIKE	PRECISION	
LOCATION			ADDED	RESULT	RESULT	% RPD	COMMENTS
PE Sample	10/01/15	Cadmium	1.00	1.00	0.996	0.5%	
MS/MSD		Lead	1.00	1.26	1.25	0.5%	
CTPXX-10-01-15		Manganese	1.00	0.964	0.954	1.1%	Sample conc. >> spike level
		Zinc	1.00	1.73	1.73	0.0%	
006/CTP Outfall	10/02/15	Cadmium	1.00	1.01	1.02	0.8%	
MS/MSD		Lead	1.00	0.942	0.950	0.8%	
		Manganese	1.00	27.4	27.7	1.1%	Sample conc. >> spike level
		Zinc	1.00	1.17	1.17	0.2%	
006/CTP Outfall	10/05/15	Cadmium	1.00	0.986	0.989	0.4%	
MS/MSD		Lead	1.00	0.923	0.922	0.2%	
		Manganese	1.00	19.4	18.9	2.5%	Sample conc. >> spike level
		Zinc	1.00	1.07	1.07	0.1%	
Trip Blank	10/05/15	Cadmium	1.00	0.928	0.928	0.0%	
MS/MSD		Lead	1.00	0.927	0.923	0.5%	
		Manganese	1.00	0.956	0.940	1.7%	Sample conc. >> spike level
TB-10-05-15		Zinc	1.00	0.922	0.918	0.4%	
006/CTP Outfall	10/07/15	Cadmium	1.00	1.01	1.01	0.9%	
MS/MSD		Lead	1.00	0.929	0.945	1.7%	
		Manganese	1.00	25.0	25.4	1.7%	Sample conc. >> spike level
		Zinc	1.00	1.08	1.11	2.3%	
006/CTP Outfall	10/09/15	Cadmium	1.00	1.02	1.00	1.9%	
MS/MSD		Lead	1.00	0.944	0.933	1.2%	
		Manganese	1.00	23.0	22.7	1.6%	Sample conc. >> spike level
		Zinc	1.00	1.07	1.05	2.2%	
PE Sample	10/10/15	Cadmium	1.00	0.963	0.975	1.2%	
MS/MSD		Lead	1.00	1.20	1.22	1.3%	
CTPXX-09-10-15		Manganese	1.00	0.924	0.940	1.7%	Sample conc. >> spike level
		Zinc	1.00	1.65	1.68	1.5%	
006/CTP Outfall	10/12/15	Cadmium	1.00	0.965	0.976	1.1%	
MS/MSD		Lead	1.00	0.902	0.907	0.6%	
		Manganese	1.00	17.6	17.7	0.7%	Sample conc. >> spike level
		Zinc	1.00	1.02	1.02	0.2%	
Kellogg Tunnel	10/12/15	Cadmium	1.00	1.01	1.02	1.2%	
MS/MSD		Lead	1.00	1.32	1.34	1.4%	
		Manganese	1.00	75.3	75.9	0.7%	Sample conc. >> spike level
		Zinc	1.00	39.3	40.8	2.0%	
006/CTP Outfall	10/14/15	Cadmium	1.00	0.983	0.984	0.1%	
MS/MSD		Lead	1.00	0.908	0.907	0.2%	
		Manganese	1.00	25.0	24.8	0.9%	Sample conc. >> spike level
		Zinc	1.00	1.06	1.06	0.3%	
PE Sample	10/15/15	Cadmium	1.00	1.01	0.991	2.3%	
MS/MSD		Lead	1.00	1.28	1.25	1.8%	
CTPXX-10-15-15		Manganese	1.00	0.994	0.989	0.6%	Sample conc. >> spike level
		Zinc	1.00	1.80	1.76	2.2%	
006/CTP Outfall	10/16/15	Cadmium	1.00	0.995	0.995	0.1%	
MS/MSD		Lead	1.00	0.930	0.927	0.3%	

		Manganese	1.00	24.1	24.7	2.8%	Sample conc. >> spike level	
		Zinc	1.00	1.08	1.08	0.2%		
006/CTP Outfall	10/19/15	Cadmium	1.00	0.990	0.992	0.2%		
MS/MSD		Lead	1.00	0.915	0.915	0.1%		
		Manganese	1.00	20.5	20.5	0.3%	Sample conc. >> spike level	
		Zinc	1.00	1.03	1.02	0.8%		
Kellogg Tunnel	10/19/15	Cadmium	1.00	1.05	1.05	0.5%		
MS/MSD		Lead	1.00	1.36	1.35	0.8%		
		Manganese	1.00	78.6	79.2	0.7%	Sample conc. >> spike level	
		Zinc	1.00	41.3	41.7	0.8%		
006/CTP Outfall	10/21/15	Cadmium	1.00	1.07	1.06	0.8%		
MS/MSD		Lead	1.00	0.989	0.982	0.7%		
		Manganese	1.00	27.2	26.8	1.5%	Sample conc. >> spike level	
		Zinc	1.00	1.11	1.10	0.6%		
PE Sample	10/22/15	Cadmium	1.00	1.04	1.03	0.6%		
MS/MSD		Lead	1.00	1.29	1.28	0.7%		
CTPXX-10-22-15		Manganese	1.00	1.01	1.02	0.5%	Sample conc. >> spike level	
		Zinc	1.00	1.84	1.82	0.9%		
006/CTP Outfall	10/23/15	Cadmium	1.00	1.03	1.04	0.2%		
MS/MSD		Lead	1.00	0.959	0.959	0.0%		
		Manganese	1.00	22.2	21.9	1.2%	Sample conc. >> spike level	
		Zinc	1.00	1.13	1.13	0.3%		
006/CTP Outfall	10/26/15	Cadmium	1.00	1.02	1.03	0.8%		
MS/MSD		Lead	1.00	0.952	0.955	0.4%		
		Manganese	1.00	18.6	18.8	0.7%	Sample conc. >> spike level	
		Zinc	1.00	1.17	1.17	0.4%		
Kellogg Tunnel	10/26/15	Cadmium	1.00	1.15	1.15	0.5%		
MS/MSD		Lead	1.00	1.51	1.51	0.3%		
		Manganese	1.00	31.1	30.9	0.6%	Sample conc. >> spike level	
		Zinc	1.00	90.7	83.2	8.6%		
006/CTP Outfall	10/28/15	Cadmium	1.00	0.938	0.960	2.4%		
MS/MSD		Lead	1.00	0.894	0.925	3.4%		
		Manganese	1.00	12.3	12.4	0.7%	Sample conc. >> spike level	
		Zinc	1.00	1.11	1.09	1.7%		
006/CTP Outfall	10/30/15	Cadmium	1.00	0.994	0.989	0.6%		
MS/MSD		Lead	1.00	0.980	0.989	0.9%		
		Manganese	1.00	25.2	25.3	0.2%	Sample conc. >> spike level	
		Zinc	1.00	1.17	1.13	3.8%		

USACE PRIME CONTRACTOR Monthly Record of Work-Related Injuries/Illnesses & Exposure

U.S. Army Corps of Engineers
WVSPB - August 2013

Month August 2015

Employees will be provided with the services of a DDC, if you file a claim for disability, it will provide you with a DDC to help you with your disability claim. If you are unable to work due to a disability, you may be entitled to receive a disability benefit. If you are unable to work due to a disability, you may be entitled to receive a disability benefit.

No accidents reported

Exposure Hours	Month:	Year To Date:	Name of Program/Submitting Researcher: Signature:	Certification of Record						
				Total:	1	2	3	4	5	6

Date: 9/11/15

Dante:

CTP Mine Water Line Open Channel Inspection Form

Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.

Date: October 01, 2015

Inspected By:

Gary Fulton, Steve Brunner

Item Inspected	Condition	Comments	
Channel Sections and Joints	Good / Poor	Check for cracks	Ok
Channel Inlet Connection @ KT	Good / Poor	Check for cracks	Ok
Channel Outlet/Pipeline Inlet	Good / Poor	Check for cracks	Ok
Channel Bottom (during low flows)	Good / Poor		Ok
Bottom Joints (during low flows)	Good / Poor		Ok
Trash Rack Assembly Rail Units	Good / Poor	Check for corrosion and bolt tightness	Ok
Trash Racks	Good / Poor	Removed debris from trash racks	
Parshall Flume	Good / Poor	Check fiberglass and joint connections	Ok

General Comments:

Bunker mine has no pumps running at this time.

The Kellogg Tunnel flow at this time is 0.83 mgd (583 gpm), pH at this time is 2.88

All flume components are in good shape at this time with the exception of the flume staff gauge.

Alternate hand held staff gauges will be utilized to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct.

Operators observed no mill discharge in the flume/trash rack area at this time.

CTP Mine Water Line Open Channel Inspection Form

Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.

Date: October 08, 2015

Inspected By:

Gary Coast, Steve Brunner

Item Inspected	Condition	Comments	
Channel Sections and Joints	Good / Poor	Check for cracks	Ok
Channel Inlet Connection @ KT	Good / Poor	Check for cracks	Ok
Channel Outlet/Pipeline Inlet	Good / Poor	Check for cracks	Ok
Channel Bottom (during low flows)	Good / Poor		Ok
Bottom Joints (during low flows)	Good / Poor		Ok
Trash Rack Assembly Rail Units	Good / Poor	Check for corrosion and bolt tightness	Ok
Trash Racks	Good / Poor	Removed debris from trash racks	
Parshall Flume	Good / Poor	Check fiberglass and joint connections	Ok

General Comments:

Bunker mine has no pumps running at this time.

The Kellogg Tunnel flow at this time is 0.89 mgd (618 gpm), pH at this time is 2.84.

All flume components are in good shape at this time with the exception of the flume staff gauge.

Alternate hand held staff gauges will be utilized to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct.

Operators observed no mill discharge in the flume/trash rack area at this time.

CTP Mine Water Line Open Channel Inspection Form

Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.

Date: October 15, 2015

Inspected By:

Steve Brunner, Gary Coast

Item Inspected	Condition	Comments	
Channel Sections and Joints	Good / Poor	Check for cracks	Ok
Channel Inlet Connection @ KT	Good / Poor	Check for cracks	Ok
Channel Outlet/Pipeline Inlet	Good / Poor	Check for cracks	Ok
Channel Bottom (during low flows)	Good / Poor		Ok
Bottom Joints (during low flows)	Good / Poor		Ok
Trash Rack Assembly Rail Units	Good / Poor	Check for corrosion and bolt tightness	Ok
Trash Racks	Good / Poor	Removed debris from trash racks	
Parshall Flume	Good / Poor	Check fiberglass and joint connections	Ok

General Comments: Removed debris from both trash racks.

Bunker mine has no pump running at this time.

The Kellogg Tunnel flow at this time is 0.90 mgd (625 gpm), pH at this time is 2.83

All flume components are in good shape at this time with the exception of the flume staff gauge.

Alternate hand held staff gauges will be utilized to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct.

Operators observed no mill discharge in the flume/trash rack area at this time.

CTP Mine Water Line Open Channel Inspection Form

Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.

Date:October 22, 2015

Inspected By:

Gary Coast, Gary Fulton

Item Inspected	Condition	Comments	
Channel Sections and Joints	Good / Poor	Check for cracks	Ok
Channel Inlet Connection @ KT	Good / Poor	Check for cracks	Ok
Channel Outlet/Pipeline Inlet	Good / Poor	Check for cracks	Ok
Channel Bottom (during low flows)	Good / Poor		Ok
Bottom Joints (during low flows)	Good / Poor		Ok
Trash Rack Assembly Rail Units	Good / Poor	Check for corrosion and bolt tightness	Ok
Trash Racks	Good / Poor	Removed debris from trash racks	
Parshall Flume	Good / Poor	Check fiberglass and joint connections	Ok

General Comments:

Bunker mine has one pump running at this time.

The Kellogg Tunnel flow at this time is 2.07 mgd (1438 gpm), pH at this time is 3.46.

All flume components are in good shape at this time with the exception of the flume staff gauge.

Alternate hand held staff gauges will be utilized to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct.

Operators removed several pieces of wood debris from the upper trash rack.

Operators observed no mill discharge in the flume/trash rack area at this time.

CTP Mine Water Line Open Channel Inspection Form

Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.

Date:October 29, 2015

Inspected By:

Gary Coast, Gary Fulton

Item Inspected	Condition	Comments	
Channel Sections and Joints	Good / Poor	Check for cracks	Ok
Channel Inlet Connection @ KT	Good / Poor	Check for cracks	Ok
Channel Outlet/Pipeline Inlet	Good / Poor	Check for cracks	Ok
Channel Bottom (during low flows)	Good / Poor		Ok
Bottom Joints (during low flows)	Good / Poor		Ok
Trash Rack Assembly Rail Units	Good / Poor	Check for corrosion and bolt tightness	Ok
Trash Racks	Good / Poor	Removed debris from trash racks	
Parshall Flume	Good / Poor	Check fiberglass and joint connections	Ok

General Comments:

Bunker mine has one pump running at this time.

The Kellogg Tunnel flow at this time is 2.05 mgd (1423 gpm), pH at this time is 3.44.

All flume components are in good shape at this time with the exception of the flume staff gauge.

Alternate hand held staff gauges will be utilized to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct.

Operators removed several pieces of wood debris from the upper trash rack.

Operators observed no mill discharge in the flume/trash rack area at this time.



One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0

Ferguson Contracting 901 N. Division Pinehurst, ID 83850	Project: BHCTP	Sampled: 01-Oct-15
		Received: 02-Oct-15
		Reported: 06-Oct-15 09:23

LAB #	WS10022-01	WS10022-02	-	-	-	-	-
SAMPLE ID	KT-10-01-15	CTPKX-10-01-15	-	-	-	-	-
Reporting Limit	10/01/2015 07:30	10/01/2015 07:00	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0661	0.0496	-	-	-	-
Lead	0.0500 mg/L	0.492	0.314	-	-	-	-
Manganese	0.0200 mg/L	76.4	-	-	-	-	-
Zinc	0.020 mg/L	42.9	0.783	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	3.45 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	80.0	-	-	-	-	-

John Kern
Laboratory Director

1891

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of 3



One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0

Ferguson Contracting

901 N. Division

Pinehurst, ID 83850

Project: BHCTP

Sampled: 02-Oct-15

Received: 02-Oct-15

Reported: 05-Oct-15 13:39

LAB #	W5X0021-01	-	-	-	-	-	-
SAMPLE ID	006-10-02-15	-	-	-	-	-	-
Reporting Limit	10/02/2015 06:00	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0038 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0000 [3]	-	-	-	-	-
Manganese	0.0200 mg/L	27.4 [1]	-	-	-	-	-
Zinc	0.020 mg/L	0.220	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.11 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.0 [4]	-	-	-	-	-

John Kern
Laboratory Director

1891

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of 3



One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0

Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: BHCTP

Sampled: 05-Oct-15

Received: 05-Oct-15

Reported: 06-Oct-15 13:45

LAB #	W5X0043-01	-	-	-	-	-	-
SAMPLE ID	006-10-05-15	-	-	-	-	-	-
Reporting Limit	10/05/2015 06:00	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0044 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0000 [3]	-	-	-	-	-
Manganese	0.0200 mg/L	18.1 [1]	-	-	-	-	-
Zinc	0.020 mg/L	0.151	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.18 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	0.6 [2] [4]	-	-	-	-	-

John Kern
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One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0

Ferguson Contracting 901 N. Division Pinehurst, ID 83850	Project: BHCTP	Sampled: 05-Oct-15
		Received: 05-Oct-15
		Reported: 06-Oct-15 13:46

LAB #	WSJ0045-01	WSJ0045-02	WSJ0045-03	WSJ0045-04	-	-
SAMPLE ID	KT-10-05-15	OC-10-05-15	RB-10-05-15	TB-10-05-15	-	-
Reporting Limit	10/05/2015 07:30	10/05/2015 07:30	10/05/2015 07:30	10/05/2015 07:30	-	-
Metals (Total) (Water)						
Cadmium	0.0100 mg/L	0.0720	0.0717	<0.0009 [3]	<0.0009 [3]	-
Lead	0.0500 mg/L	0.471	0.464	<0.0000 [3]	<0.0000 [3]	-
Manganese	0.0200 mg/L	81.6	80.0	-	-	-
Zinc	0.020 mg/L	45.2	44.7	<0.004 [3]	<0.004 [3]	-
Classical Chemistry Parameters (Water)						
pH	pH Units	3.50 [1]	3.50 [1]	-	-	-
Total Susp. Solids	mg/L	51.0	52.0	-	-	-

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Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: BHCTP

Sampled: 07-Oct-15

Received: 07-Oct-15

Reported: 08-Oct-15 11:21

LAB #	W5X0102-01	-	-	-	-	-	-
SAMPLE ID	006-10-07-15	-	-	-	-	-	-
Reporting Limit	10/07/2015 06:00	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0029 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0000 [4]	-	-	-	-	-
Manganese	0.0200 mg/L	23.8 [3]	-	-	-	-	-
Zinc	0.020 mg/L	0.149	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.19 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.8	-	-	-	-	-

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Ferguson Contracting 901 N. Division Pinehurst, ID 83850	Project: BHCTP	Sampled: 08-Oct-15
		Received: 09-Oct-15
		Reported: 13-Oct-15 14:15

LAB #	W5J0169-01	W5J0169-02	W5J0169-03	-	-	-
SAMPLE ID	KT-10-08-15	CTPKX-10-08-15	PTM-10-08-15	-	-	-
Reporting Limit	10/06/2015 07:30	10/08/2015 07:00	10/08/2015 08:00	-	-	-
Metals (Total) (Water)						
Cadmium	0.0100 mg/L	0.141	0.0499	1.32	-	-
Lead	0.0500 mg/L	0.522	0.300	<0.0000 [3]	-	-
Manganese	0.0200 mg/L	29.3	-	-	-	-
Zinc	0.020 mg/L	69.6	0.777	9.73	-	-
Classical Chemistry Parameters (Water)						
pH	pH Units	2.98 [1]	-	6.72 [1]	-	-
Total Susp. Solids	5.0 mg/L	10.0	-	0.2 [2]	-	-

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Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: BHCTP

Sampled: 09-Oct-15

Received: 09-Oct-15

Reported: 12-Oct-15 14:15

LAB #	W5X0168-01	-	-	-	-	-	-
SAMPLE ID	006-10-09-15	-	-	-	-	-	-
Reporting Limit	10/09/2015 06:00	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0032 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0000 [4]	-	-	-	-	-
Manganese	0.0200 mg/L	22.0 [3]	-	-	-	-	-
Zinc	0.020 mg/L	0.142	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.17 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.4	-	-	-	-	-

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Ferguson Contracting

901 N. Division

Pinehurst, ID 83850

Project: BHCTP

Sampled: 12-Oct-15

Received: 12-Oct-15

Reported: 13-Oct-15 14:15

LAB #	W5X0210-01	-	-	-	-	-	-
SAMPLE ID	KT-1D-12-15	-	-	-	-	-	-
Reporting Unit	10/12/2015 07:30	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0026	-	-	-	-	-
Lead	0.0500 mg/L	0.431	-	-	-	-	-
Manganese	0.0200 mg/L	75.0 [2]	-	-	-	-	-
Zinc	0.020 mg/L	38.6 [2]	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	3.56 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	46.0	-	-	-	-	-

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Ferguson Contracting 901 N. Division Pinehurst, ID 83850	Project: BHCTP	Sampled: 12-Oct-15
		Received: 12-Oct-15
		Reported: 13-Oct-15 14:12

LAB #	WSJ0208-01	WSJ0208-02	-	-	-	-
SAMPLE ID	006-10-12-15	OC-10-12-15	-	-	-	-
Reporting Unit	10/12/2015 06:00	10/12/2015 06:00	-	-	-	-
Metals (Total) (Water)						
Cadmium	0.0100 mg/L	0.0034 [2]	0.0035 [2]	-	-	-
Lead	0.0500 mg/L	<0.0000 [3]	<0.0010 [3]	-	-	-
Manganese	0.0200 mg/L	16.7	16.8	-	-	-
Zinc	0.020 mg/L	0.134	0.135	-	-	-
Classical Chemistry Parameters (Water)						
pH	pH Units	7.21 [1]	7.23 [1]	-	-	-
Total Susp. Solids	5.0 mg/L	1.2	1.4	-	-	-

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Ferguson Contracting 901 N. Division Pinehurst, ID 83850	Project: BHCTP	Sampled: 14-Oct-15
		Received: 14-Oct-15
		Reported: 15-Oct-15 15:05

LAB #	W5X0260-01	-	-	-	-	-	-
SAMPLE ID	006-10-14-15	-	-	-	-	-	-
Reporting Limit	10/14/2015 06:00	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0031 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0000 [4]	-	-	-	-	-
Manganese	0.0200 mg/L	23.8 [3]	-	-	-	-	-
Zinc	0.020 mg/L	0.153	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.15 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.4	-	-	-	-	-

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Technical Director

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One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0

Ferguson Contracting 901 N. Division Pinehurst, ID 83850	Project: BHCTP	Sampled: 16-Oct-15
		Received: 16-Oct-15
		Reported: 22-Oct-15 09:41

LAB #	W5X0336-01	W5X0336-02	-	-	-	-	-
SAMPLE ID	KT-10-15-15	CTPX-10-15-15	-	-	-	-	-
Reporting Unit	10/16/2015 07:30	10/16/2015 07:00	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.138	0.0494	-	-	-	-
Lead	0.0500 mg/L	0.530	0.300	-	-	-	-
Manganese	0.0200 mg/L	30.5	-	-	-	-	-
Zinc	0.020 mg/L	84.1 [1]	0.793	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	2.97	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	10.0	-	-	-	-	-

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Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: BHCTP

Sampled: 16-Oct-15

Received: 16-Oct-15

Reported: 19-Oct-15 15:46

LAB #	W5X0335-01	-	-	-	-	-	-
SAMPLE ID	006-10-16-15	-	-	-	-	-	-
Reporting Limit	10/16/2015 06:00	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0024 [1]	-	-	-	-	-
Lead	0.0500 mg/L	0.0033 [1]	-	-	-	-	-
Manganese	0.0200 mg/L	22.8 [2]	-	-	-	-	-
Zinc	0.020 mg/L	0.140	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.13	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.6	-	-	-	-	-

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Ferguson Contracting

901 N. Division

Pinehurst, ID 83850

Project: BHCTP

Sampled: 19-Oct-15

Received: 19-Oct-15

Reported: 20-Oct-15 14:18

LAB #	W5X0372-01	-	-	-	-	-	-
SAMPLE ID	006-10-19-15	-	-	-	-	-	-
Reporting Limit	10/19/2015 06:00	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0030 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0000 [4]	-	-	-	-	-
Manganese	0.0200 mg/L	19.3 [3]	-	-	-	-	-
Zinc	0.020 mg/L	0.151	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.14 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	0.6 [2]	-	-	-	-	-

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One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0

Ferguson Contracting 901 N. Division Pinehurst, ID 83850	Project: BHCTP	Sampled: 19-Oct-15
		Received: 19-Oct-15
		Reported: 22-Oct-15 09:56

LAB #	W5X0373-01	-	-	-	-	-	-
SAMPLE ID	KT-1D-19-15	-	-	-	-	-	-
Reporting Limit	10/19/2015 07:30	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0863	-	-	-	-	-
Lead	0.0500 mg/L	0.442	-	-	-	-	-
Manganese	0.0200 mg/L	78.0 [1]	-	-	-	-	-
Zinc	0.020 mg/L	40.6 [1]	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	3.54 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	61.0	-	-	-	-	-

Linda Johann
Supervisor Microbiology Lab

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Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: BHCTP

Sampled: 21-Oct-15

Received: 21-Oct-15

Reported: 22-Oct-15 14:33

LAB #	W5X0409-01	-	-	-	-	-	-
SAMPLE ID	006-10-21-15	-	-	-	-	-	-
Reporting Limit	10/21/2015 06:00	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0041 [2]	-	-	-	-	-
Lead	0.0500 mg/L	0.0031 [2]	-	-	-	-	-
Manganese	0.0200 mg/L	26.0 [3]	-	-	-	-	-
Zinc	0.020 mg/L	0.180	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.05 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.4	-	-	-	-	-

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One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0

Ferguson Contracting 901 N. Division Pinehurst, ID 83850	Project: BHCTP	Sampled: 22-Oct-15
		Received: 23-Oct-15
		Reported: 28-Oct-15 11:04

LAB #	WSJ0473-01	WSJ0473-02	WSJ0473-03	WSJ0473-04	-	-
SAMPLE ID	KT-10-22-15	PTM-10-22-15	OC-10-22-15	CTP10-10-22-15	-	-
Reporting Limit	10/22/2015 07:30	10/22/2015 07:30	10/22/2015 07:30	10/22/2015 07:00	-	-
Metals (Total) (Water)						
Cadmium	0.0100 mg/L	0.0647	1.34	1.32	0.0632	-
Lead	0.0500 mg/L	0.453	<0.0030 [4]	<0.0000 [4]	0.321	-
Manganese	0.0200 mg/L	81.2	-	0.698	-	-
Zinc	0.020 mg/L	40.8	9.96	9.82	0.872	-
Classical Chemistry Parameters (Water)						
pH	pH Units	3.51 [1]	7.02 [1]	7.03 [1]	-	-
Total Susp. Solids	5.0 mg/L	63.0	0.8 [2]	0.6 [2]	-	-

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Ferguson Contracting 901 N. Division Pinehurst, ID 83850	Project: BHCTP	Sampled: 23-Oct-15
		Received: 23-Oct-15
		Reported: 26-Oct-15 13:59

LAB #	W5X0472-01	-	-	-	-	-	-
SAMPLE ID	006-10-23-15	-	-	-	-	-	-
Reporting Limit	10/23/2015 06:00	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0029 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0000 [3]	-	-	-	-	-
Manganese	0.0200 mg/L	20.9 [1]	-	-	-	-	-
Zinc	0.020 mg/L	0.177	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	6.95 [1][4]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.6	-	-	-	-	-

Kirby Gray
Technical Director

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Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: BHCTP

Sampled: 26-Oct-15

Received: 26-Oct-15

Reported: 27-Oct-15 16:06

LAB #	W5X0504-01	-	-	-	-	-	-
SAMPLE ID	006-10-26-15	-	-	-	-	-	-
Reporting Limit	10/26/2015 06:00	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0031 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0000 [3]	-	-	-	-	-
Manganese	0.0200 mg/L	17.7	-	-	-	-	-
Zinc	0.020 mg/L	0.221	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.11 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.0	-	-	-	-	-

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Ferguson Contracting 901 N. Division Pinehurst, ID 83850	Project: BHCTP	Sampled: 26-Oct-15
		Received: 26-Oct-15
		Reported: 26-Oct-15 12:38

LAB #	W5X0505-01	-	-	-	-	-	-
SAMPLE ID	KT-10-26-15	-	-	-	-	-	-
Reporting Limit	10/26/2015 07:30	-	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.142	-	-	-	-	-
Lead	0.0500 mg/L	0.545	-	-	-	-	-
Manganese	0.0200 mg/L	30.2 [1]	-	-	-	-	-
Zinc	0.020 mg/L	83.1 [1]	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	2.99 [2]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	19.0	-	-	-	-	-

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Ferguson Contracting 901 N. Division Pinehurst, ID 83850	Project: BHCTP	Sampled: 28-Oct-15
		Received: 28-Oct-15
		Reported: 28-Oct-15 15:01

LAB #	W5X0548-01	-	-	-	-	-	-
SAMPLE ID	006-10-28-15	-	-	-	-	-	-
	10/28/2015 06:00	-	-	-	-	-	-
Reporting Unit							
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0031 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0000 [3]	-	-	-	-	-
Manganese	0.0200 mg/L	11.4	-	-	-	-	-
Zinc	0.020 mg/L	0.201	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.10 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.4	-	-	-	-	-

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Ferguson Contracting 901 N. Division Pinehurst, ID 83850	Project: BHCTP	Sampled: 29-Oct-15 to 30-Oct-15
		Received: 30-Oct-15
		Reported: 02-Nov-15 13:07

LAB #	WSJ0618-01	WSJ0618-02	WSJ0618-03	-	-	-
SAMPLE ID	KT-10-29-15	CTPXK-10-29-15	006-10-30-15	-	-	-
Reporting Limit	10/29/2015 07:30	10/29/2015 07:00	10/30/2015 06:00	-	-	-
Metals (Total) (Water)						
Lead	0.0500 mg/L	0.469	0.324	0.0060 [2]	-	-
Manganese	0.0200 mg/L	71.2	-	24.2	-	-
Zinc	0.020 mg/L	43.7	0.928	0.185	-	-
Classical Chemistry Parameters (Water)						
pH	pH Units	3.58 [1]	-	7.04 [1]	-	-
Total Susp. Solids	5.0 mg/L	62.0	-	1.6	-	-
Metals (Total) (Water)						
Cadmium	0.0100 mg/L	0.0632	0.0546	0.0026 [1]	-	-

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